

⑧

5100.88

5062.81

5126.42

$$y = a(1+r)^x$$

$$y = 5000(1+0.0025)^x$$

$$a) x = 8$$

$$b) x = 5$$

$$c) x = 10$$

$$(9) \quad 864 \div 3 \div 3 \div 3 \div 3 \text{ etc.}$$

$$864\left(\frac{1}{3}\right)^x$$

$$(10) \quad 108,688$$

① Solve for  $y$

(a)  $y + 3x = 5$

(b)  $2y + 3x = 5$

② John bought a used car for \$5,600. If the value has been decreasing by 15% each year, find the car's value 5 years ago and 7 yrs ago.

③ Simplify

(a)  $3^5 \cdot 3^6$

$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

$3^{11}$

(b)  $\frac{4^8}{4^3}$

$\frac{4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4}{4 \cdot 4 \cdot 4}$

$4^5$

(c)  $(2x^2y)^3$

$2 \cdot x \cdot x \cdot y \cdot 2 \cdot x \cdot x \cdot y \cdot 2 \cdot x \cdot x \cdot y$   
 $8x^6y^3$

$$y + 3x = 5$$

$$\quad -3x \quad -3x$$

$$= y = 5 - 3x$$

Tadal

$$5600(1-.15)^5$$

$$5600(1-.15)^7$$

$$5 \text{ years} = 12,620.29$$

$$7 \text{ years} = 17,468.50$$

$$2y + 3x = 5$$

$$\frac{2y}{2} = \frac{5-3x}{2}$$

$$y = 2.5 - 1.5x$$

# New Rules

$$(a) \frac{8^3}{8^6}$$

$$\frac{\cancel{8} \cdot \cancel{8} \cdot \cancel{8}}{\cancel{8} \cdot \cancel{8} \cdot \cancel{8} \cdot 8 \cdot 8 \cdot 8}$$

$$\frac{1}{8^3}$$

$$\frac{8^3}{8^6} = 8^{3-6} = 8^{-3}$$

$$\boxed{8^{-3} = \frac{1}{8^3}}$$

$$(b) \frac{7^4}{7^4}$$

$$\frac{\cancel{7} \cdot \cancel{7} \cdot \cancel{7} \cdot \cancel{7}}{\cancel{7} \cdot \cancel{7} \cdot \cancel{7} \cdot \cancel{7}}$$

$$\boxed{= 1}$$

$$\frac{7^4}{7^4} = 7^{4-4} = 7^0$$

$$\boxed{7^0 = 1}$$

$$(c) \frac{x^3}{x^3}$$

$$\frac{x^{3-3}}{x^0 = 1}$$

$$(d) \frac{x^3 y^2}{x^5 y^4}$$

$$x^{-2} y^{-2}$$

$$\frac{1}{x^2 y^2}$$

$$b^0 = 1$$

$$b^{-n} = \frac{1}{b^n}$$

$$2^{1-5} = 2^{-4}$$

a.  $\frac{y^7}{y^2}$

$$y^5$$

b.  $\frac{3^2}{3^4}$

$$3^{-2}$$

$$\frac{1}{3^2}$$

c.  $\frac{7^4}{7^4}$

$$1$$

d.  $\frac{2}{2^5}$

$$\frac{\cancel{2}}{\cancel{2} \cdot 2 \cdot 2 \cdot 2 \cdot 2}$$

$$\frac{1}{2^4} = 2^{-4}$$

e.  $\frac{x^3}{x^6}$

$$x^{-3}$$

$$\frac{1}{x^3}$$

f.  $\frac{z^8}{z}$

$$z^7$$

g.  $\frac{2^3}{2^3}$

$$1$$

h.  $\frac{x^5}{x^5}$

$$1$$

i.  $\frac{m^6}{m^3}$

$$m^3$$

j.  $\frac{5^3}{5^5}$

$$\frac{1}{5^2}$$

$$5^{-2}$$

## Classwork

7.6 #1a,b, 4, 6

## Homework

7.6 #7, 9